Landscape and Ecological Management Plan

Royal Berkshire NHS Foundation Trust, London Road, Reading, RG1 5AN

Gray Baynes & Shew Architects

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Guidelines

This assessment has been designed to meet:

- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> This approach is enshrined in Government planning guidance, for example, paragraph 185 of the National Planning Policy Framework for England.
>
> The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Gray Baynes & Shew Architects to undertake a Landscape and Ecology Management Plan (LEMP) for the Royal Berkshire NHS Foundation Trust, London Road, Reading, RG1 5AN (hereafter referred to as "the site"). Of relevance to this LEMP, the site has been subject to the following ecological assessments:

- A Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) (Arbtech Consulting Ltd 2023).
- BREEAM Land use and Ecology Assessment (LE02 – LE05) (Arbtech Consulting Ltd 2024).

1.2 Project Description

Proposals for the site comprise the removal of an existing two storey, prefabricated building and the subsequent construction of a new facility, alongside new entrance canopy, link bridge to an adjacent hospital building, and new landscaping (hereafter referred to as the "proposed development"). A proposed development plan is provided in **Appendix 1**.

1.3 Site Context

The site is located at national grid reference SU 72585 72568 and has an area of approximately 0.24ha. The site is characterised by a two-storey, prefabricated building and adjacent infrastructure within the wider Royal Berkshire Hospital site. Habitats recorded on and directly adjacent to the site include developed land; sealed surface in the form of buildings and hardstanding, modified grassland, and scattered trees. The site is located within an urban context approximately 1.3km southeast of Reading Town Centre and is enclosed by a car park to the south, east, and west, and buildings associated with the wider Royal Berkshire Hospital to the north. A site location plan is provided in **Appendix 2.**

1.4 Scope of This Report

As detailed within the BREEAM V6.1: New Construction Guidelines (BRE Global Ltd. 2023), in order to achieve the second BREEAM Land Use and Ecology credit under LE05: *Long Term Ecology Management and Maintenance*, a LEMP must be produced. Guidance detailed under LE05 states:

"A Landscape and Ecology Management Plan, or equivalent, has been developed in accordance with BS 42020:2013 Section 11.1 covering at least the first five years after project completion as a minimum and including:

5.a: Actions and responsibilities of relevant individuals prior to handover;

5.b: The ecological value and condition of the site at handover and how this is expected to develop and change over time.

5.c: Identification of opportunities for ongoing alignment with activities beyond the development project, which support the aims of BREEAM's Strategic Ecology Framework

5.d: Identification and guidance to trigger appropriate remedial actions to address previously unforeseen impacts

5.e: Clearly defined and allocated roles and responsibilities for delivering the plan."

This LEMP aims to provide ecological mitigation, enhancement, and management prescriptions focussed on protecting ecological receptors identified through previous ecological assessment and achieving realistic gains in biodiversity as a result of the proposed development. As such, this LEMP aims to fulfil requirements under LE05 as to achieve the second credit in accordance with the BREEAM V6.1: New Construction Land Use and Ecology Assessment.

2.0 Ecological Baseline Conditions Relevant to This Report

The baseline ecological conditions of relevance to this report were determined as a result of the PEA PRA (Arbtech Consulting Ltd 2023).

2.1 Habitats Recorded on Site

The site is characterised by a two-storey, prefabricated building and adjacent infrastructure within the wider Royal Berkshire Hospital site. Habitats recorded on and directly adjacent to the site include:

- Developed land; sealed surface in the form of buildings and hardstanding;
- Modified grassland;
- and scattered trees.

2.2. Value to Protected/Notable Species

Given the type and extent of habitats recorded and the assessed connectivity between the sites and the wider landscape, the site was assessed to provide opportunities for the following protected and/ or notable species:

- Badgers;
- Bats;
- Common species of nesting birds; and
- Hedgehogs.

The site is not considered suitable to support any other protected and/or notable species.

Badgers

The modified grassland on site provides suitable foraging and commuting opportunities for badgers, albeit limited. It is noted that due to the intensely managed nature of the grassland and frequent disturbance at the site, the site is considered to provide very poor sett building opportunities. No evidence indicating the presence of badgers was recorded on or within 30m of the site. Although no evidence indicating the presence of badgers was recorded, badgers can access the site from the wider landscape and their presence for transient periods whilst foraging and commuting cannot be discounted.

Bats

Building B1 and all trees located on and directly adjacent to the site were assessed to provide **negligible** value to support roosting bats.

Habitats recorded on and directly adjacent to the site are assessed to provide foraging and commuting opportunities for bats in the form of scattered trees and modified grassland, albeit limited. These habitats are likely to attract invertebrate prey species. Furthermore, the trees and grassland contribute to the continuation of vegetated habitats in an otherwise urban landscape and may be utilised by commuting bats travelling between resources. However, given the small size of the site and presence of extensive suitable habitat locally, the site is not assessed to represent a significant resource in the context of the wider landscape.

Nesting birds

Due to the small size of the site and nature of habitats recorded, the site is not considered suitable to support a signficant assemblage of protected and/ or notable bird species. However, the trees on and adjacent to the site provide suitable nesting habitat for low numbers of common bird species.

Hedgehogs

The modified grassland on site provides suitable foraging and commuting opportunities for hedgehogs, albeit limited. However, the site lacks any refuge opportunities and no evidence indicating the presence of hedgehogs was recorded on or within 30m of the site. Although no evidence indicating the presence of hedgehogs was recorded, hedgehogs can access the site from the wider landscape and their presence for transient periods whilst foraging and commuting cannot be discounted.

2.3 Scope for Mitigation and Enhancement

Although the site is small in extent and there are no significant ecological constraints to development, there remains opportunities at the site to support badgers, foraging and commuting bats, common species of nesting birds, and hedgehogs, albeit likely for transient periods only. It is therefore assessed that mitigation through precautionary working methods are required to reduce the potential for impacts to these species to an acceptable low level during construction. It is also assessed that enhancement of the site targeting these species groups will have viable chances of occupation and will provide effective gains to biodiversity post-development.

3.0 Ecological Mitigation and Enhancement Plan

3.1 Mitigation

Mitigation prescriptions to reduce adverse impacts to existing ecological features and biodiversity as identified through previous ecological assessment are detailed in **Table 1** below.

Table 1: Mitigation Prescriptions

Mitigation	Specification
Persons Responsible and Lines of Communication	A Development Biodiversity Champion will be selected for the construction phase of the development. The Biodiversity Champion will be someone with significant influence during construction, such as the contract or project manager. The Development Biodiversity Champion will be responsible for ensuring all actions outlined in this LEMP are implemented. Any queries with regards to the mitigation and enhancement prescriptions will be addressed to the project ecologist and communication will be retained between the Development Biodiversity Champion and project ecologist throughout the project. The project ecologist's contact details are located on the title page of this report. The Development Biodiversity Champion will inform the project ecologist of the commencement of enhancement installation works and provides updates where necessary. Once the ecological enhancements have been installed, a Post-Development Biodiversity Champion will be allocated who has influence on site once the development is complete, such as a long-term maintenance contractor. The Post-Development Biodiversity Champion will be responsible for ensuring all recommended management is undertaken and any associated remedial measures are completed where necessary.
Post-development site visit by a Suitably Qualified Ecologist	A post-development site visit by a Suitably Qualified Ecologist will be undertaken to confirm the successful installation of the biodiversity enhancements and proposed soft landscaping. A short report will be produced detailing the results of the site visit and any remediation recommendations, if necessary.
Precautionary methods of working – Terrestrial mammals	The following precautionary working methods will be adhered to during construction to reduce the potential for impacts to terrestrial mammals to an acceptably low level: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which mammals could use.

	• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.
Precautionary methods of working – Nesting birds	At the time of writing this report, no trees require removal to facilitate the development. As such, no impacts to nesting birds are anticipated. However, should proposals be amended and tree removal be required, removal works should be undertaken outside of the nesting bird season between March and September (inclusive). If this timeframe cannot be avoided, a close inspection of the vegetation will be undertaken no longer than 24 hours prior to removal works by a suitably qualified ecologist. Any vegetation containing active nests and a suitable buffer from construction activity will need to be retained until the young have fledged.

3.2 Enhancement

Enhancement of the site including the provision of new habitats through soft landscaping and species-specific features in addition to any subsequent management requirements are detailed in **Table 2** below. The proposed soft landscaping is shown on the plan in **Appendix 1** and the proposed species-specific enhancements are illustrated on the plan in **Appendix 3**.

Table 2: Enhancement Prescriptions

Ecological Enhancement	Specification
Tree and shrub planting	***Overview:*** New trees and shrubs are proposed to be planted, as shown on the plan in **Appendix 1.** ***Objectives:*** • To plant a range of native trees and nectar producing shrubs that will provide foraging and refuge opportunities for protected and/ or notable species groups including badgers, bats, birds, and hedgehogs. • Ensure that good horticultural practice is employed to encourage long-term health and vitality of all trees and shrubs. • Ensure well-balanced crowns and/ or natural shape by preventing over competition. ***Creation Method:*** • **Ground preparation and planting** New tree and shrub planting is proposed over both areas already covered by soft landscaping and areas currently covered by

hardstanding. For the areas covered by landscaping, the exisitng vegetation will be removed as to create a bare earth substrate for planting. For areas of hardstanding, the exisitng developed land will be removed as to create a bare earth substrate for planting. Each tree and shrub should be panted within a hole three times as wide of the supplied pot and of a similar depth. Root balls should be soaked thoroughly in water before planting and root balls should be loosened to expose restricted roots before planting. The planted trees and shrubs should then be backfilled ensuring there are no air pockets around roots or any roosts protruding out of the ground.

- **Timing**

  It is best to prepare the land during the summer ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment including faster growth during the first growing season.

Management prescriptions:

Table 2.1: Tree and shrub management prescriptions.

Management	When	Rationale
At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To maintain amenity and wildlife value.
For saplings over 2m, the provision of stakes and guards should be considered. Guards to be left on for a minimum of 5 years	N/A	Protect from damage
Stakes should be checked and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed	When required; checked annually in Autumn.	Maintain protection
Remove weeds	When required; checked twice annually in early spring and in Autumn.	Reduce competition for resources nutrients etc.by weeds
Application of bark mulch at a depth of 50 mm	Immediately after planting and then when required; checked annually in	Reduce competition for resources nutrients etc.by weeds

		Autumn.	
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow
	Apply a light dressing of well-rotted manure	Annually in the winter	Note the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow.
	Removal of spent flowers from perennial shrubs should be removed through 'deadheading'	Twice annually, late spring and in the Autumn.	Allows plants to place more energy into re-growth.
	Watering should be undertaken before and after planting out and as necessary for the continued thriving of all planting.	When required; provide more water during periods of draught and less water during times of prolonged rain.	Ensures plants do not dry out and subsequently fail.

Amenity grassland creation

Overview

Although the area covered by amenity grassland post-development is already covered by grassland, given its proximity to the new building it is likely to be subject to extensive damage during construction. During the re-instatement of the new grassland, there is an opportunity to diversify the species composition to enhance opportunities for biodiversity. The extent of the post-development grassland coverage is shown on the Plan in **Appendix 1.**

Objectives

- To create a successful grassland with an enhanced species diversity that will provide habitat for pollinating invertebrate species, that will in turn, provide foraging opportunities for protected and/ or notable species groups including bats, birds, badgers, and hedgehogs.
- Employ techniques that use organic fertilizers and minimise the use of chemicals wherever possible.

Creation Method

- **Ground preparation**

A soft strip of the current vegetation and any hardstanding surfaces must be undertaken in the first instance and removed from the area to provide a bare soil substrate for sewing the seed mix. The bare soil should be subject to light rolling or trampling to provide a firm base for seeding.

- **Seeding**

  To be undertaken in the spring between April and May or in the Autumn between September and October.

  The following seed rates are recommended: 40kg/ha or 4g/m^2

- **Proposed seed mix:**
  It is proposed to seed the grassland with Emorsgate EM2 General Purpose Meadow Mixture. This seed mix contains 5no. grass species and 15no. wildflower species. The mixture contains no dominant grass species. Due to this diversity and absence of dominant species, the number of grass and wildflower species present per m^2 is increased; it is therefore considered reasonable to assume a species diversity of 6-8 species per m^2. For exact specifications, please refer to: https://wildseed.co.uk/about-us/.

Management prescriptions:

Table 2.2: Amenity Grassland Management Prescriptions.

Management	When	Rationale
Cut monthly during the growing season	Between April and October	Cutting monthly will allow a neat a tidy appearance whilst allowing more species to effectively colonise.
Turn and dry the cut grass over 3-5 days before removing arisings off Site	Following cuts in May and September.	This allows any seeds present seeds to drop encouraging species diversity and invertebrates to relocate unharmed.
Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,

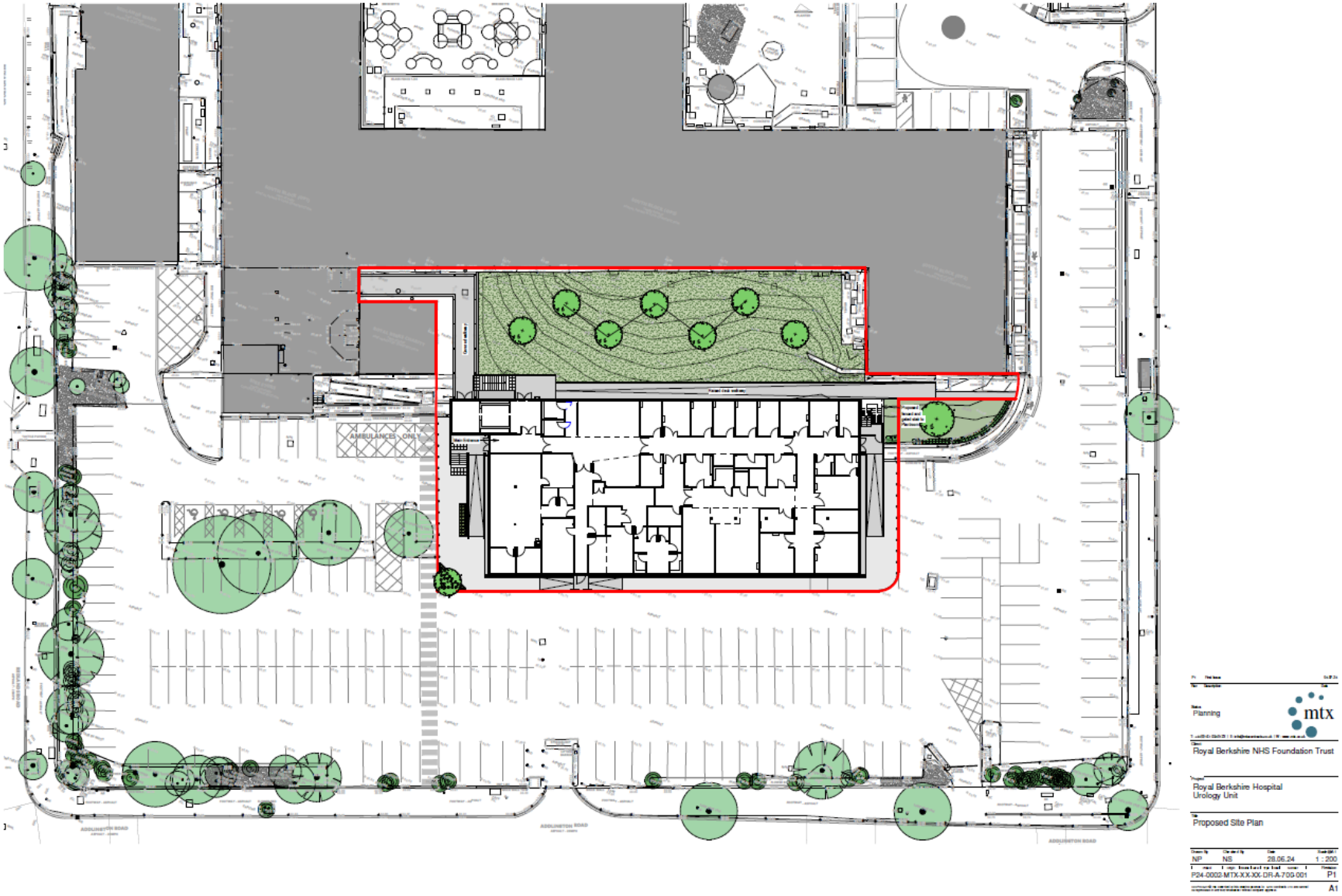
Provision of bat boxes	Two bat boxes will be installed onto existing mature trees located adjacent to the west of the site, as shown on the plan in **Appendix 3.** Details of the bat boxes to be installed are as follows: • The bat boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to require minimal maintenance and have a lifespan of 25 years plus. • 2No. Vivara Pro Low Profile Woodstone Bat Boxes will be installed (or similar alternative), as shown in **Figure 1**. This bat box type is suitable to support a range of species including noctules *Nyctalus noctule* and soprano pipistrelles *Pipistrellus pygmaeus,* both of which represent Species of Principal Importance as listed on Schedule 41 of the NERC Act (see **Appendix 4**). • The bat boxes will be positioned at least 3m above ground level facing a southern elevation with a clear flight path to and from the entrance, away from artificial light and facing vegetated habitats. **Figure 1:** Vivara Pro Low Profile Woodstone Bat Box (image credit: https://www.nhbs.com/equipment?qtview=194583) ***Management:*** The proposed bat boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bat boxes will increase the chances of occupation by roosting bats. However, it is recommended that the bat boxes are inspected annually for the first five years outside of the typical active season for bats (May to September inclusive) following installation. Bat boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.

Provision of bird boxes	Two bird boxes will be installed onto the new building as shown on the plan in **Appendix 3.** Details of the bird boxes to be installed are as follows: • The bird boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to have minimal maintenance and have a lifespan of 25 years plus. • 2No. Vivara Pro WoodStone House Sparrow Nest Boxes will be installed (or similar alternative), as shown in **Figure 2.** The bird box type is designed to provide enhanced nesting opportunities for house sparrow *Passer domesticus.* House sparrows represent species of principal importance listed on Section 41 of the NERC Act (see **Appendix 4**). • The bird boxes will be positioned at least 3m above ground level facing a northern elevation where they will be sheltered from prevailing wind, rain and strong sunlight. **Figure 2**: Vivara Pro WoodStone House Sparrow Nest Box Nest Box (image credit arkwildlife.co.uk) ***Management:*** The proposed bird boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bird boxes will increase the chances of occupation by nesting birds. However, it is recommended that the bird boxes are inspected annually for the first five years outside of the typical nesting bird season (March to September inclusive) following installation. Bird boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.

5.0 Bibliography

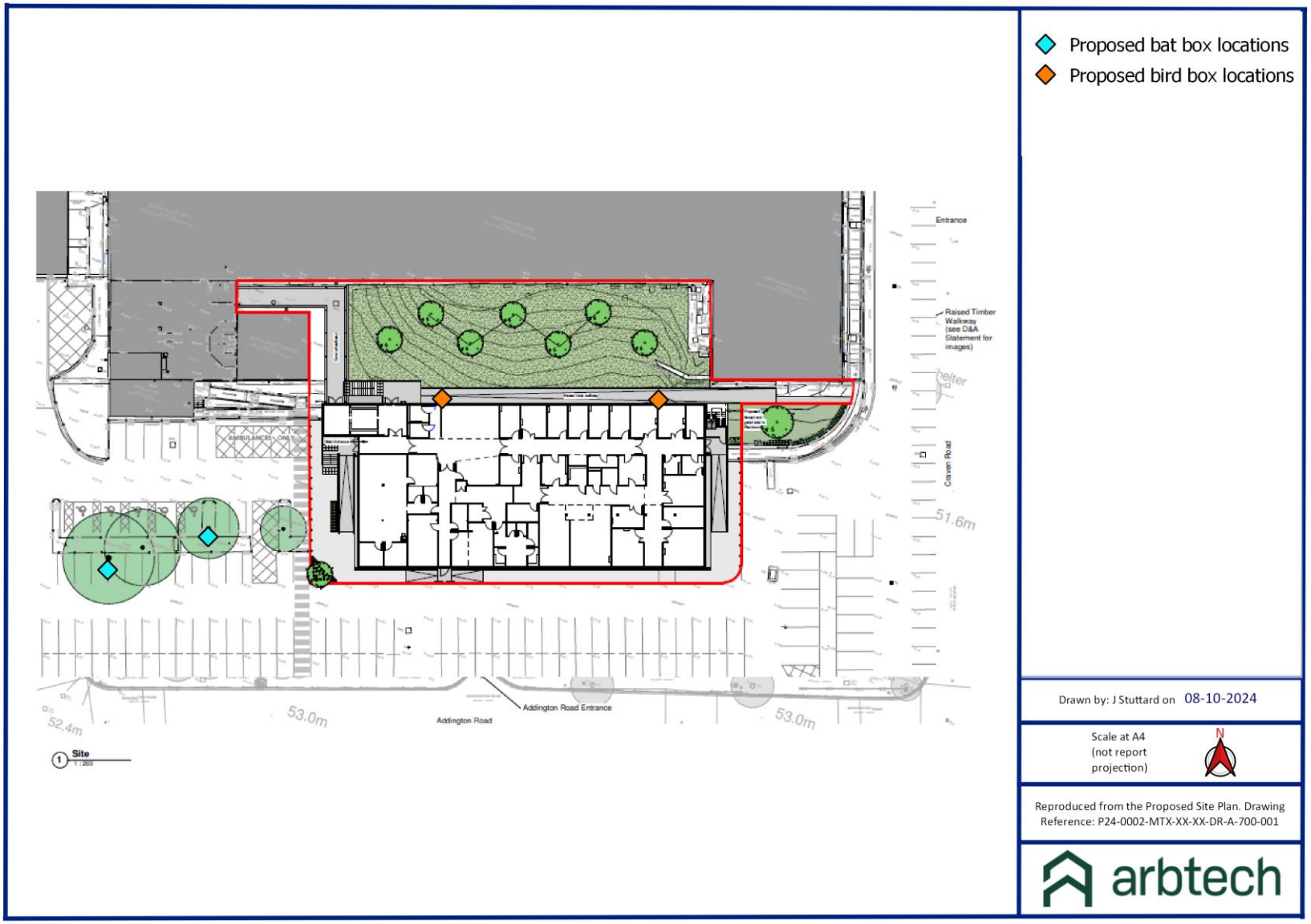
- Arbtech Consulting Limited. (2023). Preliminary Ecological Appraisal and Preliminary Roost Assessment. Royal Berkshire NHS Foundation Trust, RG1 5AN.
- Arbtech Consulting Limited. (2024). BREEAM Land Use and Ecology Assessment. Royal Berkshire NHS Foundation Trust, RG1 5AN.
- British Standards Institute. (2013). BS 42020, Biodiversity – Code of practice for planning and development. http://www.eoebiodiversity.org/pdfs/BS42020.pdf
- British Standards Institute. (2013). BS 42020, Biodiversity – Code of practice for planning and development (2013) http://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf
- CIEEM. (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester. http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf
- CIEEM. (2013). Guidelines for Preliminary Ecological Appraisal Institute of Ecology and Environmental Management http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/GPEA/GPEA_April_2013.pdf
- HMSO: Wildlife and Countryside Act 1981 (as amended) http://jncc.defra.gov.uk/page-1377
- HMSO: Countryside & Rights of Way Act (2000) http://jncc.defra.gov.uk/page-1378
- HMSO: Natural Environmental and Rural Communities Act (2006) http://www.legislation.gov.uk/ukpga/2006/16/contents
- HMSO: The Conservation of Habitats and Species Regulations (2010) http://www.legislation.gov.uk/uksi/2010/490/contents/made
- National Planning Policy Framework. (2021). https://www.gov.uk/government/publications/national-planning-policy-framework--2
- Reading Borough Council. (2019). Reading Borough Local Plan. https://www.reading.gov.uk/planning-and-building-control/planning-policy/new-local-plan/

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan

Appendix 3: Ecological Enhancement Plan



Appendix4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.
SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres” however they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved. Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.
Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:
In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':
the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;

- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.
-

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds

Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.
Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers
Badgers Meles meles are protected under The Protection of Badgers Act which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:
A development licence will be required from the relevant countryside agency for any development works liable to affect an active badge sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds
With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.
This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking

- In Scotland only, intentional or reckless harassment

Effects on development works:
Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.
Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and reptiles)
The sand lizard Lacerta agilis, smooth snake Coronella austriaca, natterjack toad Epidalea calamita, pool frog Pelophylax lessonae and great crested newt Triturus cristatus receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder Vipera berus, grass snake Natrix natrix, common lizard Zootoca vivipara and slow-worm Anguis fragilis. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:
A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.
Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole Arvicola terrestris is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are liable to affect habitats known to support water voles, the relevant countryside agency must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency (e.g. Natural England) for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters Lutra lutra are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;

- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:
Works which are liable to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice
Dormice Muscardinus avellanarius are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:
Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish
The white clawed crayfish Austropotamobius pallipes receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:
The relevant countryside agency will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate

surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.
To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants
With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.
Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:
An EPSM licence will be required from the relevant countryside agency for works which are liable to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.
Invasive Species
Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site however it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle Cirsium vulgare
- Creeping thistle Cirsium arvense
- Curled dock Rumex crispus
- Broad-leaved dock Rumex obtusifolius
- Common ragwort Senecio jacobaea

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

LOCAL PLANNING POLICY

Reading Borough Local Plan 2019-2036

Policy EN12 Biodiversity and the Green Network States:

a. *"The identified Green Network, the key elements of which are shown on the Proposals Map, shall be maintained, protected, consolidated, extended and enhanced. Permission will not be granted for development that negatively affects the sites with identified interest or fragments the overall network. The Green Network comprises:*

- *Sites with identified biodiversity interest - Local Wildlife Sites, Local Nature Reserves, Biodiversity Opportunity Areas, protected and priority species and their habitats, Priority and Biodiversity Action Plan habitats, and the River Thames and all its tributaries (including the River Kennet and the Kennet & Avon Canal); and*
- *Areas with potential for biodiversity value and which stitch the Green Network together – designated Local Green Space and open green spaces, and existing and potential Green Links.*

New development shall demonstrate how the location and type of green space, landscaping and water features provided within a scheme have been arranged such that they maintain or link into the existing Green Network and contribute to its consolidation. Such features should be designed to maximise the opportunities for enhancing this network. All new development should maximise opportunities to create new assets and links into areas where opportunities are as yet unidentified on the Proposals Map.

b. *On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible. Development should:*

- *Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals wherever practicable; and*
- *Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.*

In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be: 1) avoided; 2) mitigated or; 3) compensated for on-site; then new development will provide off-site compensation to ensure that there is "no net loss" of biodiversity. Provision of off-site compensation shall be calculated in accordance with nationally or locally recognised guidance and metrics. It should not replace existing alternative habitats, and should be provided prior to development."

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.